

Teacher's instructions

Primary Productivity (PSOW 6)

1. Measuring primary productivity in Elodea and Algae

The rate of oxygen production and photosynthesis can be estimated by measuring the amount of dissolved oxygen and how it changes over time.

To do this a technique called the "dark/light bottle" is used. Here the oxygen concentrations are measured and compared before and after incubation in light and darkness. The usual incubation time is 5 days.

The differences between the measurements of dissolved oxygen (DO) give an indication of:

- | | |
|------------------------|-------------------------------|
| 1. Respiration: | Initial bottle – dark bottle |
| 2. Net Productivity: | light bottle – initial bottle |
| 3. Gross Productivity: | light bottle – dark bottle |

Design an experiment to look at an abiotic factor that should alter the primary productivity. All criteria will be assessed for this investigation.